

Amendments to the Claims

The following listing of claims replaces all previous claim listings in the present application.

91. (Original) An electrical conductor comprising transparent electrically conductive material and at least one conductive track formed from electrically conductive particles and providing a source or sink for electrical charge transport to and from the transparent material.

92. (Original) An electrical conductor according to Claim 91, wherein the electrically conductive particles are nanoparticles.

93. (Original) An electrical conductor according to Claim 92, where the nanoparticles have a mean maximum cross-sectional dimension less than 1000 nm.

94. (Original) An electrical conductor according to Claim 92, where the nanoparticles have a mean maximum cross sectional dimension less than 100 nm, preferably less than 20 nm.

95. (Original) An electrical conductor according to Claim 91, being formed on a substrate, wherein the transparent electrically conductive material and/or a fluid comprising the electrically conductive particles is selectively deposited on the substrate using a drop-on-demand printing technique.

96. (Original) An electrical conductor according to Claim 91, wherein the electrically conductive particles are deposited on the or a substrate and are treated after deposition so as to increase the electrical conductivity of said at least one track.

97. (Original) An electrical conductor according to Claim 95, wherein the deposited electrically conductive particles are caused to form said at least one conductive track, said at least one conductive track being a continuous, discrete, conductive track.

98. (Original) An electrical conductor according to Claim 91, wherein the track is formed by at least one of sintering, melting, and annealing of at least some of the electrically conductive particles.

99. (Original) An electrical conductor according to Claim 91 for use in a display device, wherein said at least one conductive track is of such a size as to not be visible to a user during operation of the display device.

100. (Original) An electrical conductor according to Claim 91, wherein said at least one conductive track has a width equal to or less than 100 microns and preferably equal to or less than 50 microns.

101. (Original) An electrical conductor according to Claim 91 for use in a display device, wherein said transparent electrically conductive material is adapted to be aligned with a pixel of said display device and preferably said electrical conductor is adapted to act as a source or sink of electrical charge so as to activate or deactivate said pixel.

102. (Original) An electrical conductor according to Claim 91, wherein the at least one conductive track defines a window, and preferably the transparent electrically conductive material is deposited within said window using the technique of drop-on-demand printing.

103. (Withdrawn) A method of fabricating an electrical conductor, comprising forming on a substrate a region of transparent electrically conductive material and at least one conductive track, said at least one conductive track being formed from electrically conductive particles and providing a source or sink for electrical charge transport to and from the transparent material.

104. (Withdrawn) A method according to Claim 103, wherein the electrically conductive particles are nanoparticles.

105. (Withdrawn) A method according to Claim 104, wherein the nanoparticles have a mean

maximum cross- sectional dimension less than 1000 nm.

106. (Withdrawn) A method according to Claim 104, where the nanoparticles have a mean maximum cross sectional dimension less than 100 nm, preferably less than 20 nm.

107. (Withdrawn) A method according to Claim 103, comprising selectively depositing the transparent electrically conductive material and/or a fluid comprising the electrically conductive particles on the substrate using a drop-on-demand printing technique.

108. (Withdrawn) A method according to Claim 103, comprising depositing the electrically conductive particles on the substrate and treating the electrically conductive particles after deposition so as to increase the electrical conductivity of said at least one track.

109. (Withdrawn) A method according to Claim 107, comprising causing the deposited electrically conductive particles to form said at least one conductive track, said at least one conductive track being a continuous, discrete, conductive track.

110. (Withdrawn) A method according to Claim 103, comprising forming the track by at least one of sintering, melting, and annealing.

111. (Withdrawn) A method according to Claim 103, wherein the electrical conductor is adapted to be used in a display device, and said at least one conductive track is of such a size as to not be visible to a user during operation of the display device.

112. (Withdrawn) A method according to Claim 103, wherein said at least one conductive track has a width equal to or less than 100 microns and preferably equal to or less than 50 microns.

113. (Withdrawn) A method according to Claim 103, comprising aligning said transparent electrically conductive material with a pixel of a display device, and preferably arranging said

electrical conductor to act as a source or sink of electrical charge so as to activate or deactivate said pixel.

114. (Withdrawn) A method according to Claim 103, comprising forming the at least one conductive track so as to define a window, and preferably depositing the transparent electrically conductive material within said window using the technique of drop-on-demand printing.

115. (Withdrawn) A method according to Claim 103, wherein the transparent material comprises at least one of a transparent conductive oxide and a transparent polymer.

116. (Withdrawn) A method according to Claim 103, wherein the transparent electrically conducting material has dispersed therein further electrically conductive particles, said further electrically conductive particles having a higher conductivity than the transparent material.

117. (Withdrawn) A method according to Claim 103, wherein the electrically conductive particles are metallic, preferably at least one of silver, gold, copper, aluminium, tin, zinc, lead, indium, molybdenum, nickel, platinum and rhodium particles.

118. (Withdrawn) A method according to Claim 103, wherein at least part of the conductor has a transparency greater than 70%, preferably greater than 80%, at 550 nm wavelength.

119. (Withdrawn) A method according to Claim 103, wherein the at least one conductive track at least partially surrounds the transparent electrically conductive material.

120. (Withdrawn) A method according to Claim 103, wherein said at least one track and the transparent material partially overlap.

121. (Withdrawn) A method according to Claim 103, wherein said at least one track directly contacts the transparent material.

122. (Withdrawn) A method according to Claim 103, comprising providing further, electrically conductive material between said at least one track and the transparent material.

123. (Withdrawn) A method according to Claim 103, wherein the substrate is a transparent substrate.

124. (Withdrawn) A method according to Claim 123, comprising providing further transparent material between the substrate and the transparent electrically conductive material.

125. (Withdrawn) A method according to Claim 103, wherein said at least one conductive track is of lower transparency than the transparent material at 550 nm wavelength.

126. (Withdrawn) A method according to Claim 103, comprising depositing the transparent material over said at least one conductive track.

127. (Withdrawn) A method according to Claim 103, wherein the electrically conductive material comprises a metal with a lower melting temperature than that of the transparent material.

128. (Withdrawn) A method according to Claim 103, wherein at least one of the conductive track and the transparent electrically conductive material is formed using nanotactics.

129. (Withdrawn) A method according to Claim 103, wherein said electrically conductive particles are deposited within grooves formed on a substrate, preferably so as to partially fill the grooves.

130. (Withdrawn) A method according to Claim 129, wherein the grooves are formed in a coating formed on the substrate.

131. (Withdrawn) A method according to Claim 129, wherein the grooves are formed by laser ablation.

132. (Withdrawn) A method according to Claim 103, comprising forming said at least one conductive track in an interdigitated pattern.

133. (Original) An electrical conductor according to Claim 91, wherein the transparent electrically conductive material is translucent electrically conductive material.

134. (Withdrawn) A method according to Claim 103, wherein the transparent electrically conductive material is translucent electrically conductive material.

135. (Withdrawn) An apparatus for forming an electrical conductor comprising means for depositing transparent electrically conductive material on a substrate, and means for depositing electrically conductive particles on the substrate so as to form at least one conductive track, said conductive track providing a source or sink for electrical charge transport to and from the transparent material.

136. (Withdrawn) An apparatus according to Claim 134, wherein said means for depositing said transparent electrically conductive material and/or said means for depositing electrically conductive particles comprises a printhead adapted to carry out a drop-on-demand printing technique.

137. (Withdrawn) An apparatus according to Claim 135, comprising means for treating said transparent electrically conductive material and/or said electrically conductive particles, preferably after deposition.

138. (Withdrawn) An apparatus according to Claim 135, wherein said treating means comprises means for at least one of melting, sintering, and annealing.

139. (Withdrawn) An apparatus according to Claim 135, wherein said treating means comprises a laser, preferably mounted on the or a printhead.

140. (Original) A display device comprising at least one pixel and an electrical conductor according to Claim 91, wherein the transparent electrically conductive material is aligned with said at least one pixel and preferably the electrical conductor acts as a source or sink of electrical charge so as to activate or deactivate said at least one pixel.